

### **REMARKS/ARGUMENTS**

Reconsideration and allowance in view of the foregoing amendment and the following remarks are respectfully requested.

Claims 2-4, 7, 8, and 11-17 are now pending.

Claims 2 and 4 were rejected under 35 U.S.C.112, second paragraph, as allegedly being indefinite because it was unclear from the phrase "closest portion of the inner wall surface of the outlet, which is closest to the second wall surface of the discharge groove" how close the distance is between the inner wall surface and the second wall surface. Reconsideration is respectfully requested.

Indeed, in this regard it appears that the Examiner has misconstrued claims 2 and 4 as characterizing or limiting the distance between the inner wall surface of the outlet and the second wall surface of the discharge to a particular numerical value. It is respectfully submitted, however, that neither claim 2 nor claim 4 is drafted to such a characteristic. Rather, on careful review of claim 2, it can be seen that claim 2 specifically provides that the second end wall surface of the discharge groove is flush with the portion of the inner wall surface of the outlet that is closest to the second end wall surface of the discharge groove. Thus, claim 2 specifically provides that the portion of the inner wall surface that is closest to the second end wall surface of the discharge groove is flush with it. Since these structures are flush, a reference to a distance between these structures is not appropriate nor required for claim 2 to be clear. With reference to the embodiment illustrated in Figure 2, the closest portion of the inner wall surface (13x) of outlet (13), that is the portion closest to the second end wall surface (12b1) of discharge groove (12), is located at the connection between the inner wall surface (13x) of outlet (13) and second end wall surface (12b1) of the discharge groove (12).

With regard to the Examiner's rejection of claim 4, it is respectfully noted that claim 4 provides that a portion of the inner wall surface of the outlet that is closest to the second end wall surface of the discharge groove is spaced away from the second end wall surface of the discharge groove. In an example embodiment of the invention, this is depicted in Figure 19 and described in the paragraph bridging pages 21 and 22. It is respectfully submitted that it is clear from claim 4 that the combination of claim 4 requires that the portion of the inner wall surface of the outlet, which is closest to the end wall surface of the discharge groove, be spaced away from the end wall surface of the discharge groove in the rotational direction of the rotor (to the left in Figure 19). The amount by which these wall surfaces are spaced is not critical to the invention of claim 4 and need not be specified in the claim for clarity or to distinguish the invention from the applied art. Therefore, there is no requirement whatsoever for the particular distance by which the surfaces are spaced to be recited in claim 4, either for clarity or patentability. It is respectfully submitted that the skilled artisan would well understand that claim 4 requires that these two surfaces be spaced and in what direction. It is therefore respectfully submitted that no revision to claim 4 is required for this claim to be definite.

In view of the foregoing, reconsideration and withdrawal of the rejection under 35 USC 112, second paragraph, is solicited.

Claims 2 and 11 were rejected under 35 U.S.C.102(b) as being anticipated by Linder. Applicant respectfully traverses this rejection.

Anticipation under Section 102 of the Patent Act requires that a prior art reference disclose every claim element of the claimed invention. See, e.g., Orthokinetics, Inc. v. Safety Travel Chairs, Inc., 806 F.2d 1565, 1574 (Fed. Cir. 1986). While other references may be used to interpret an allegedly anticipating reference, anticipation must be found in a single reference. See, e.g., Studiengesellschaft Kohle, G.m.b.H. v. Dart Indus., Inc., 726 F.2d 724, 726-27 (Fed. Cir. 1984). The absence of any element of the claim from the cited reference negates anticipation. See, e.g.,

Structural Rubber Prods. Co. v. Park Rubber Co., 749 F.2d 707, 715 (Fed. Cir. 1984). Anticipation is not shown even if the differences between the claims and the prior art reference are insubstantial and the missing elements could be supplied by the knowledge of one skilled in the art. See, e.g., Structural Rubber Prods., 749 F.2d at 716-17.

Claim 2 has been amended for clarity and to now more specifically recite that the discharge groove and the at least one outlet are disposed entirely on one axial side of the plurality of vanes.

In contrast to the invention as set forth in claim 2, in Linder, the discharge groove and the at least one outlet are not disposed entirely on one axial side of the plurality of vanes. More particularly, the discharge groove and the at least one outlet of Linder are spaced radially outward of the plurality of vanes, so that they are disposed within the axial extent of the plurality of vanes. Thus, the invention as set forth in claim 2 is not anticipated by Linder and the prior art record does not motivate the skilled artisan to modify Linder so as to meet the limitations of applicant's claim 2. It is therefore respectfully submitted that claim 2 is not anticipated by Linder.

Claim 11 has been amended above as well and now recites that the at least one outlet extends directly from the second end of the discharge groove, in a direction that is tangent to rotation of the rotor. The above mentioned feature of claim 11 allows the abrasive particles to be more effectively discharged from the outlet along with the working fluid. More specifically, when the outlet extends in a direction that is tangent to rotation of the rotor, the abrasive particles, which tend to be urged against the inner peripheral wall surface of the housing by the rotational force, can be advantageously discharged through the outlet since the rotational force applied to the working fluid can be effectively utilized to discharge the abrasive particles contained in the working fluid when the working fluid is discharged through the outlet in the direction that is tangent to the rotation of the rotor. The cited reference to Linder does not teach or suggest the foregoing feature of claim 11, so that claim 11 is not anticipated by Linder. Moreover,

the record prior art does not teach or suggest the reconfiguration of Linder so as to meet the limitations of claim 11. It is therefore respectfully submitted that claim 11 is not anticipated by nor obvious from the applied art.

In view of the foregoing, reconsideration and withdrawal of the rejection based upon Linder is requested.

Claim 4 was rejected under 35 U.S.C.102(b) as being anticipated by Ehmann. Applicant respectfully traverses this rejection.

Claim 4 recites *inter alia* that the closest portion of the inner wall surface of the outlet, which is closest to the second end wall surface of the discharge groove, is spaced from the second end wall surface of the discharge groove in the rotational direction of the rotor. As noted above, this feature of claim 4 is depicted by way of example in Figure 19 and describes in particular in the paragraph bridging pages 21 and 22 of the specification. This structural characteristic effectively limits deposition of the abrasive particles at the second end wall surface of the discharge groove.

In contrast to the invention of claim 4, in Ehmann, the closest portion of the inner wall surface of the outlet, which is closest to the second end wall surface of the discharge groove, is spaced away from the second end wall surface of the discharge groove in a direction opposite from the rotational direction of the rotor, as shown in Figure 2. Furthermore, as the Examiner has admitted his rejection of claim 3 (discussed below), Ehmann discloses that the closest portion of the inner wall surface of the outlet in a rotational direction of the rotor is equal to or smaller than the axial extent of the second end wall surface of the discharge groove in the direction and generally parallel to the rotational axis of the rotor. As a consequence, the abrasive particles in Ehmann tend to be deposited at the second end wall surface of the discharge groove. Thus, the structure of Ehmann is different than the structure recited in applicant's claim 4 and the Examiner has not established that it would be obvious to reconfigure Ehmann so as to meet the limitations of claim 4.

In view of the foregoing, reconsideration and withdrawal of the rejection based of claim 4 based on Ehmann is solicited.

Claim 8 was rejected under 35 U.S.C.102(b) as being anticipated by Horioka et al. Applicant respectfully traverses this rejection.

Claim 8 provides that the at least one outlet includes first and second outlets. This claim also requires that the first outlet extends generally parallel to a rotational axis of the rotor, and that the second outlet extends generally perpendicular to the rotational axis of the rotor. Although the Examiner had characterized Horioka as teaching first and second outlets, it is respectfully submitted that Horioka does not teach or suggest a first outlet that extends generally parallel to the rotational axis of the rotor. In this regard, it is understood that the Examiner has considered hole 3c of Figure 1 of Horioka to be a first outlet. However, the hole 3c of Horioka is an oil supply hole, through which oil is supplied into the housing. This hole is not communicated with the discharge groove and does not constitute a "first outlet" as recited in applicant's claim 8. It is therefore respectfully submitted that claim 8 is not anticipated by nor obvious from Horioka.

Claim 3 was rejected under 35 U.S.C. 103(a) as being unpatentable over Ehmann in view of design choice. Applicant respectfully traverses this rejection.

Claim 3 provides that the distance between the second end wall surface of the discharge groove and the closest portion of the inner wall surface of the outlet in the rotational direction of the rotor is equal to or smaller than an axial extent of the second end wall surface of the discharge groove in a direction generally parallel to the rotational axis of the rotor. When the above-noted feature of claim 3 is satisfied, the accumulated abrasive particles form a slant top surface, which is angled at an angle greater than 45 degrees to decline toward the outlet, as shown by way of example in Figure 18. When the slant surface is angled at an angle of greater than 45 degrees, the abrasive particles tend to flow toward the outlet. Furthermore, as discussed for

example at page 20, line 9 - page 21, line 19 of the applicant's specification, the horizontal deposition force, which causes deposition of the abrasive particles from the second end surface of the discharge groove in the right hand direction in Figure 18, is substantially the same as the vertical deposition force, which causes deposition of the abrasive particles from the bottom surface of the discharge groove in the upward direction in Figure 18. Thus, the horizontal deposition extent of the abrasive particles in the horizontal direction is substantially the same as the vertical deposition extent of the abrasive particles in the vertical direction. Thus, when the distance between the second end wall surface of the discharge groove and the closest portion of the inner wall surface of the outlet is equal to or smaller than the axial extent of the second end wall surface of the discharge groove, the abrasive particles will not reach the operational range of the vanes beyond the discharge groove. The Examiner has acknowledged that Ehmann does not teach the above-noted feature of claim 3 but has summarily concluded that it would be a "obvious matter of design choice" to provide the particularly relationship between the step and the depth of the discharge groove that applicant has recited in claim 3. Applicant respectfully but strongly disagrees with the Examiner's summary conclusion that the unique and advantageous features claimed would have been obvious from the record prior art.

The above noted feature of claim 3 is not a mere matter of design choice but is based on applicant's recognition of the flow and deposition characteristics noted above. As the prior art of record does not teach or suggest an analysis of the relationship from which the relationship of claim 3 was derived, it is respectfully submitted that the prior art of record does not motivate the skilled artisan to provide the particular dimensional relationship of the invention as recited in claim 3. It is therefore respectfully submitted that claim 3 is not anticipated by nor obvious from the applied art and there is no motivation in the prior art record to modify the Ehmann so as to meet the limitations of applicant's claim 3.

It is clear that the initial burden of establishing a basis for denying patentability to a claimed invention rests upon the Examiner. In re Piasecki, 745 F. 2d 1468, 223 USPQ 785 (Fed. Cir. 1984). In establishing a *prima facie* case of obviousness under 35 U.S.C. § 103, it is incumbent upon the Examiner to provide a reason why one of ordinary skill in the art would have been led to arrive at the claimed invention from the prior art. Ex parte Clapp, 227 USPQ 972 (BPAI 1985). To this end, the requisite motivation must stem from some teaching, suggestion or inference in the prior art as a whole or from the knowledge generally available to one of ordinary skill in the art and not from applicant's disclosure. See, for example, Uniroyal, Inc. v. Rudkin-Wiley Corp. 837 F.2d 1044, 7 USPQ 2d 1434 (Fed. Cir. 1988).

Because none of the references of record discloses the details of the claimed invention lacking in the primary reference, nor the unique advantages thereof, there can be no suggestion to modify the structure to contain those features. See In re Civitello, 339 F.2d 243, 144 USPQ 10, (CCPA 1964).

For all the reasons advanced above reconsideration and withdrawal of the rejection of claim 3 are respectfully requested.

Claim 7 was rejected under 35 U.S.C.103(a) as being unpatentable over Horioka et al. in view of design choice. Applicant respectfully traverses this rejection.

Claim 7 recites that the outlet includes the inner wall surface, and at least a portion of the inner wall surface of the outlet extends in a direction that is tangent to rotation of the rotor.

The Examiner acknowledges that Horioka does not teach this feature of claim 7, but summarily concludes that it would be an obvious matter of design choice to modify Horioka so as to meet the limitations of claim 7. Applicant respectfully but strongly disagrees with the Examiner's conclusion.

When at least a portion of the inner wall surface of the outlet extends in the direction that is tangent to the rotation of the rotor, as recited in claim 7, the abrasive particles, which tend to be urged against the inner peripheral wall surface of the housing by the rotational force, can be advantageously discharged through the outlet since the rotational force applied to the working fluid can be effectively utilized to discharge the abrasive particles contained in the working fluid when the working fluid is discharged through the outlet in a direction that is tangent to the rotation of the rotor. This feature of claim 7 is based on an understanding of the above-noted flow relation as a consequence of the inventor's investigation and it is respectfully submitted is not a mere matter of design choice. Indeed, the Examiner has cited no evidence that the noted feature of claim 7 was a known design choice that one skilled in the art would "obviously" incorporate in Horioka.

Since the Examiner's proposed modification of Horioka is not based on any evidence in the record and the Examiner has not otherwise established that the feature recited in this claim was known to be a matter of design choice at the time of applicant's invention, it is respectfully submitted that the Examiner has not established a prima facie case of obviousness with regard to the subject matter of claim 7. It is therefore respectfully submitted that claim 7 is not anticipated by nor obvious from the prior of record.

Claims 12 and 13 were rejected under 35U.S.C.103(a) as being unpatentable over Ehmann in view of legal precedent. Applicant respectfully traverses this rejection.

Claim 12 recites that the discharge groove is sloped in the direction of gravity from both the first end and second end of the discharge groove toward the outlet. The cited reference to Ehmann and other references of record do not teach or suggest that there is accumulation of the abrasive particles in the discharge groove and/or there is a need to limit accumulation of the abrasive particles in the discharge groove. Moreover, the record art does not teach or suggest how the accumulation of abrasive particles could or should be limited. Thus, one skilled in the art, that does not have the benefit



of applicant's disclosure, would not be motivated to modify the device of Ehmann much less to modify the discharge groove in such a manner that the discharge groove is sloped in the direction of gravity from both the first end and second end of the discharge groove toward the outlet. It is therefore respectfully submitted that the Examiner has not established that one skilled in the art would be motivated to modify Ehmann or that a properly motivated artisan would modify Ehmann so as to produce the invention claimed. It is therefore respectfully submitted that claim 12 and claim 13 dependent therefrom are not anticipated by nor obvious from the prior art of record and that the Examiner has not established a prima facie case that these claims are obvious under Section 103. Moreover, the Examiner's suggestion that the claimed configuration is one that would not affect "the functioning of the device", is not well taken. Indeed, as established above, the configuration of the discharge groove in an example embodiment of the invention is specifically designed for directing abrasive particles and thus affects the functioning of the device.

In view of the foregoing, reconsideration and withdrawal of the rejection of claims 12 and 13 is respectfully requested.

New claims 14-17 depend from one or more of the claims above and are submitted to be patentable for the same reasons.


All objections and rejections having been addressed, it is respectfully submitted that the present application is in condition for allowance and an early Notice to that effect is earnestly solicited.

KANO et al.  
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Respectfully submitted,

**NIXON & VANDERHYE P.C.**

By:

A handwritten signature in cursive script, appearing to read "Michelle N. Lester", written over a horizontal line.

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